The Development of a Brief Version of the Posttraumatic Cognitions Inventory (PTCI-9)

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Abstract
Negative posttraumatic cognitions lead to the development and maintenance of posttraumatic stress disorder symptoms. There is a need for a brief measure to assess these cognitions. Participants were administered the Posttraumatic Cognitions Inventory (PTCI) and measures of mental health symptomatology. These data were used to develop a brief version of the PTCI (PTCI-9) in 223 male and female veterans, which was then examined in a sample of 117 female civilians. Confirmatory factor analyses demonstrated an acceptable fit in both samples. The PTCI-9 total and subscale scores showed strong internal consistencies (Cronbach’s αs = .80–.87) and strong correlations with the PTCI in veterans (rs = .90-.96) and civilians (rs = .91-.96). Measurement invariance testing demonstrated partial invariance between the two samples. The PTCI-9 significantly correlated with measures of PTSD, depression, and quality of life. These findings demonstrate that the PTCI-9 is a reliable and valid measure of posttraumatic cognitions that can reduce patient and provider burden.

Keywords
posttraumatic stress disorder, posttraumatic cognitions, psychometrics, brief measures, assessment

Posttraumatic stress disorder (PTSD) is a serious mental health condition with a lifetime prevalence estimate of 6.8% in the general population (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995) and 10% to 31% in veteran populations (Kang, Natelson, Mahan, Lee, & Murphy, 2003; Kulka et al., 1990; Tanielian & Jaycox, 2008). Negative posttraumatic cognitions, specifically maladaptive cognitions about the self, others, and the world, have been proposed as one of the mechanisms that lead to the development and maintenance of PTSD (Dunmore, Clark, & Ehlers, 1999; Ehlers & Clark, 2000; Foa & Kozak, 1986; Resick & Schnicke, 1993). Rigid thinking about the world and themselves prior to a traumatic event may make individuals more vulnerable to the development of PTSD because they may have difficulty integrating the traumatic event into their pre-existing schemas (Foa & Riggs, 1993; Foa & Rothbaum, 1998). Ehlers and Clark (2000) theorized that individuals who do not naturally recover from PTSD may experience negative appraisals of themselves and the world that lead to a sense of current internal or external threats. This heightened sense of threat can lead to negative emotions (e.g., fear) and subsequent maladaptive behaviors, such as avoidance, which serve to maintain PTSD symptoms.

Recent studies have found that changes in posttraumatic cognitions preceded changes in PTSD symptoms during PTSD treatment, suggesting that posttraumatic cognitions are one of the mechanisms of change in PTSD treatments (Schumm, Dickstein, Walter, Owens, & Chard, 2015; Zalta et al., 2014); however, there is a need for additional studies to examine the role of posttraumatic cognitions as an underlying mechanism of change and mediator of PTSD treatment outcomes. Given how important posttraumatic cognitions are in the development, maintenance, and reduction of PTSD symptoms, it is necessary to have psychometrically valid measures to assess posttraumatic cognitions. Additionally, there is a need for brief and pragmatic measures so that researchers and clinicians in various settings (e.g., community mental health, private practice) can assess these constructs in an efficient manner that reduces patient burden and increases organizational efficiencies (Lewis, Weiner, Stanick, & Fischer, 2015). The availability of a brief measure may facilitate more frequent assessment of PTSD symptoms.
posttraumatic cognitions during PTSD treatment studies, which would help answer questions regarding underlying mechanisms of change, mediation, and provide useful clinical information for providers.

The Posttraumatic Cognitions Inventory (PTCI; Foa, Ehlers, Clark, Tolin, & Orsillo, 1999) was developed to assess posttraumatic appraisals and their relationship to PTSD and other posttraumatic reactions, such as symptoms of depression and anxiety. The PTCI was developed in a sample of 600 participants, including 110 treatment-seeking individuals, 190 community members, and 300 undergraduate students (Foa et al., 1999). The final measure contained 33 items and represented three factors: (a) Negative Cognitions of the Self (21 items “Self” subscale), (b) Negative Cognitions of the World (7 items “World” subscale), and (c) Self-Blame for the traumatic event (5 items “Blame” subscale). The PTCI demonstrated internal consistency for the PTCI total score and subscale scores. The PTCI had a medium to large correlation with measures of PTSD, depression, and anxiety (Foa et al., 1999). However, the Blame subscale exhibited weaker correlations with PTSD, anxiety, and depression measures compared with the PTCI total score and other subscales scores (Foa et al., 1999). The PTCI successfully discriminated between individuals with PTSD and individuals without PTSD. Individuals with PTSD scored significantly higher on the PTCI than traumatized individuals without PTSD and nontraumatized individuals, but traumatized individuals without PTSD and nontraumatized individuals did not differ from each other on PTCI scores (Foa et al., 1999).

Since the development of the PTCI there have been several additional examinations of its psychometric characteristics using both the English and translated versions. The original and translated versions have been tested in adult (Beck et al., 2004; Daie-Gabai, Aderka, Allon-Schindel, Foa, & Gilboa-Schechtman, 2011; Gulec, Kalafat, Boysan, & Barut, 2013; Muller et al., 2010; Su & Chen, 2008) and adolescent (Hyland et al., 2015) samples with various types of trauma survivors (e.g., motor vehicle accident survivors, interpersonal trauma survivors). Results of confirmatory factor analyses (CFAs) have varied across studies and different items have been removed to achieve the best model fit, which may indicate variation in methods and samples. For example, negative posttraumatic cognitions may be influenced by age, culture, and trauma. Research has found that interpersonal trauma (e.g., sexual assault) survivors have greater posttraumatic cognitions than accident survivors (Foa et al., 1999; Muller et al., 2010). Beck et al. (2004) did not find the Blame subscale to significantly correlate with PTSD measures in a sample of motor vehicle survivors and proposed that this may be because survivors who were not responsible for the accident may not blame themselves. These findings highlight that performance of measures and the type and magnitude of posttraumatic cognitions may differ across specific trauma populations. Additionally, the inconsistent findings across studies may be due to variability in research methodology, statistical analyses, and translation methods. Therefore, a brief version of the measure that is generalizable across samples may help reduce the number of idiosyncratic versions of the PTCI and also reduce patient, provider, organizational, and researcher burden.

Although the need for valid measures is important, it has also led to measures that are often too lengthy and time-consuming to successfully implement in clinical settings (Glasgow, 2013). There is a need for brief measures that are important to stakeholders, feasible for use in most “real-world settings,” reduce patient and provider burden, and are easy for providers to interpret the results (Glasgow, 2013; Glasgow & Riley, 2013; Lewis et al., 2015). There is also a need for low burden measures in research settings. The use of a brief measure of negative posttraumatic cognitions would be useful to reduce participant and staff burden in longitudinal or mechanistic studies. The development of a brief measure could make it more feasible for providers and health care organizations to use standardized measures while still being able to meet other clinical and research demands. Additionally, the use of standardized brief measures may facilitate incorporating important clinical data into electronic health records (Tang, Ralston, Arrigotti, Qureshi, & Graham, 2007).

The development of a brief version of the PTCI is also timely given the changes to the PTSD diagnostic criteria in the Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-5; American Psychiatric Association, 2013). One of the major changes to the DSM-5 PTSD diagnosis from the Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV) diagnosis is the addition of a fourth symptom cluster, Negative Alterations in Cognition and Mood (Friedman, 2013), which includes negative posttraumatic cognitions as diagnostic PTSD symptoms (e.g., exaggerated blame for the self or others; strong negative beliefs about the self, others, or the world) and these diagnostic items strongly overlap with items on the PTCI. Therefore, it is possible that the PTCI may more strongly correlate with the DSM-5 PTSD diagnosis than with the DSM-IV PTSD diagnosis. This may provide additional benefits for clinicians and researchers to include a brief version of the PTCI in future clinic assessment batteries and longitudinal research studies to examine treatment outcomes and mechanisms while minimizing burden.

The primary objective of the present study was to develop a reliable and valid brief and pragmatic version of the PTCI that can be used in various research, clinical, and health care settings with reduced patient, provider, researcher, and organization burden. A second objective was to examine the reliability and validity of this measure. We hypothesized that the original three-factor structure will be replicated in the brief version of the PTCI measure and the fit indices will indicate a good fit to the data. Additionally, we hypothesized that the total score of the brief version of the measure would correlate highly with the full 33-item total score of the original PTCI. We hypothesized that the total score of the brief version of the PTCI (PTCI-9; see
Appendices A and B) would have a moderate, positive association with PTSD and depression measures and a moderate negative relationship with quality-of-life measures. To demonstrate discriminant validity, we hypothesized that the PTCI-9 would demonstrate a nonsignificant relationship with the Wechsler Adult Intelligence Scale (WAIS) Information and Vocabulary subtests. While not a primary objective of the study, as a secondary analysis, we examined the factorial invariance of the PTCI-9 across both civilian and veteran samples, should researchers seek to make direct comparisons between these contexts. We also examined incremental concurrent criterion validity.

Method

Procedures

The current study is a two-part study aimed at developing a brief version of the PTCI that uses baseline data from two randomized controlled trials (RCTs; Morland et al., 2014; Morland et al., 2015) that compared the effectiveness of a cognitive behavioral treatment for PTSD delivered via a videoteleconferencing (VTC) modality to traditional in-person therapy delivery. Morland et al. (2014) compared cognitive processing therapy–cognitive version only (CPT-C; Resick, Monson, & Chard, 2007) delivered via VTC to in-person CPT-C in a sample of male combat veterans. Morland et al. (2015) compared CPT delivered via VTC to in-person CPT in a sample of female veterans and civilians with PTSD. In order to be eligible for the current study, participants needed to have complete PTCI data at baseline assessment. All procedures for the present study were reviewed and approved by University of California San Diego, San Diego State University, and VA Pacific Islands Healthcare System institutional review boards.

Study 1. The purpose of Study 1 was to develop a brief version of the PTCI in a sample of male and female veterans from the two previously completed RCTs who were referred for PTSD treatment (Morland et al., 2014; Morland et al., 2015). Participants were recruited from Department of Veterans Affairs (VA) clinical sites and Vet Centers across Oahu, Hawaii. All participants were assessed for PTSD using the Clinician-Administered PTSD Scale (CAPS) for DSM-IV (Blake et al., 1995). Veterans’ baseline scores on the PTCI, CAPS, PTSD Checklist–Specific (PCL-S; Weathers, Litz, Herman, Huska, & Keane, 1993), Beck Depression Inventory–II (BDI-II; A. T. Beck, Steer, & Brown, 1996), and Quality of Life Inventory (QOLI; Frisch, 2009; Frisch, Cornell, Villanueva, & Retzlaff, 1992) were collapsed across the two RCTs for the current study.

Study 2. Study 2 used a sample of civilian women referred for PTSD treatment (Morland et al., 2015) with various trauma types to serve as a replication sample for Study 1. Participants were recruited through community providers, community outreach events, and various advertisements (e.g., newspaper, radio). The CAPS was used to assess for a PTSD diagnosis at baseline assessment. Study 2 also collapsed baseline PTCI, CAPS, BDI-II, and QOLI data. A civilian sample was used to determine if the brief version developed in the veteran sample would have an adequate model fit and good psychometric properties in a civilian population.

Participants

Study 1. As shown in Table 1, participants were 223 male and female veterans referred for PTSD treatment who were
Table 2. Demographic Characteristics of the Female Civilian Participants.

<table>
<thead>
<tr>
<th>Demographic variable</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, years, mean (SD)</td>
<td>46.7 (12.28)</td>
<td></td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NH/PI</td>
<td>21</td>
<td>18</td>
</tr>
<tr>
<td>Asian</td>
<td>19</td>
<td>16</td>
</tr>
<tr>
<td>Hispanic</td>
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<td>5</td>
</tr>
<tr>
<td>White</td>
<td>55</td>
<td>48</td>
</tr>
<tr>
<td>NA/NA</td>
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<tr>
<td>Black</td>
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<td>3</td>
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<td>22</td>
</tr>
<tr>
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<td>24</td>
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<tr>
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<td>7</td>
</tr>
<tr>
<td>Divorced</td>
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<td>39</td>
</tr>
<tr>
<td>Separated</td>
<td>10</td>
<td>9</td>
</tr>
</tbody>
</table>

Note. NA/NA = Native American/Native Alaskan; NH/PI = Native Hawaiian/Pacific Islander.

Measures

All baseline measures were the same for Study 1 and Study 2.

Posttraumatic Cognitions Inventory. The Posttraumatic Cognitions Inventory (PTCI; Foa et al., 1999) is a self-report measure used to assess posttraumatic cognitions. The PTCI is composed of three subscales: Negative Cognitions About the Self, Negative Cognitions About the World, and Self-Blame. The measure was designed to be administered as a 36-item measure but only 33 items are nonexperimental and meant to be scored; therefore, the three nonexperimental items are not included in the scoring of the subscales or the total score. Questions are rated using a 7-point Likert-type scale ranging from 1 (totally disagree) to 7 (totally agree). The PTCI total score is calculated by summing the raw scores of the three subscales and ranges from 33 to 231. Subscale scores are determined by summing each item in the subscale to calculate a raw subscale score and then dividing by the number of items in the subscale, which results in a mean subscale score. The current study only included individuals who had completed all the nonexperimental items on the PTCI. Previous studies with civilian and veteran populations have found Cronbach's alpha ranging from .91 to .98 for the total score, .80 to .97 for the Self subscale, .82 to .91 for the World subscale, and .76 to .87 for the Blame subscale (Beck et al., 2004; Foa et al., 1999; Katz, Snetter, Robinson, Hewitt, & Cojucar, 2008; Renaud, 2008; Sutherland et al., 2012). Sensitivity and specificity for detecting PTSD have ranged from .70 to .78 and .81 to .93, respectively (Beck et al., 2004; Foa et al., 1999). Cronbach's alpha for the 33-item PTCI total score in this sample was .96.

Clinician-Administered PTSD Scale. The Clinician-Administered PTSD Scale (CAPS; Blake et al., 1995) is a 30-item structured, diagnostic interview for PTSD. The CAPS assesses the frequency and intensity of the 17 symptoms of DSM-IV PTSD criteria. Frequency scores are rated on a scale ranging from 0 (never) to 4 (daily or almost every day). Intensity scores are assessed on a scale ranging from 0 (never) to 4 (extreme, incapacitating distress). Item-level severity is calculated by summing the frequency and intensity scores. A total severity score is derived through summing the 17 items, which ranges from 0 to 136. The CAPS has demonstrated excellent psychometric properties (Weathers, Keane, & Davidson, 2001). Cronbach's alpha in the current sample was .89.

PTSD Checklist. The PTSD Checklist (PCL; Weathers et al., 1993) is a 17-item self-report measure that assesses DSM-IV PTSD symptoms. Responses are rated on a 5-point Likert-type scale ranging from 1 (not at all) to 5 (extremely). Individual items are summed to produce a severity score that ranges from 17 to 85 with higher scores indicating
greater distress. Using the optimal cutoff score in a sample of female veterans, sensitivity and specificity were .79 (Dobie et al., 2002). Internal consistency was .96 in a sample of male veterans (Keen, Kutter, Niles, & Krinsley, 2008). Cronbach’s alpha for the current study was .99.

**Beck Depression Inventory–II.** The Beck Depression Inventory–II (BDI-II; Beck et al., 1996) is a 21-item self-report measure to assess for DSM-IV depression symptoms. The items are rated on a 0–4 scale ranging from 0 (e.g., I don’t have thoughts of killing myself) to 3 (e.g., I would kill myself if I had the chance); however, Items 16 and 18 have seven response options to indicate an increase or decrease in the symptom. A total score is calculated by summing the total of all 21 items, which ranges from 0 to 63. Internal consistency in the current sample was .94.

**Quality of Life Inventory.** The Quality of Life Inventory (QOLI; Frisch et al., 1992) is a 32-item measure that assesses quality of life and life satisfaction in 16 domains of life (e.g., health, self-esteem, work). Each domain is rated on a 0 (not at all important) to 2 (extremely important) point scale to assess its importance in one’s life and is rated again on a −3 (very dissatisfied) to 3 (very satisfied) point scale for how satisfied the individual is in this domain of life. The importance and satisfaction scores are multiplied together for a weighed score for each domain. An overall score is then calculated by averaging all of the nonzero weighted scores. Cronbach’s α ranged from .86 to .89 in veteran samples (Frisch et al., 1992).

**Verbal Comprehension Index Subsets of the Wechsler Adult Intelligence Scale, Third Edition.** The Information subtest of the WAIS-III (Wechsler, 1997) Verbal Comprehension Index assesses an individual’s range of general knowledge about different topics. The Vocabulary subtest of the WAIS-III Verbal Comprehension Index assesses an individual’s language development and word knowledge and evaluates one’s ability to express ideas easily and flexibly.

**Analytic Strategy**

In the current study, first and higher order factor structures were tested for the brief version of the PTCI. All CFAs were conducted with MPlus statistical software using maximum likelihood estimation with robust standard errors (MLR), which appropriately adjusts chi-square and standard error values (Muthén & Muthén, 1998). Examination of skewness revealed that some variables were nonnormally distributed so we used MLR to adjust for nonnormality. Model fit was examined using several recommended indices: (a) comparative fit index (CFI) and Tucker–Lewis index (TLI), with values greater than .95 indicating good fit; (b) the root mean square error of approximation (RMSEA), with values less than .06 indicating good fit, and (c) standardized root mean square residual (SRMR), with values less than .08 indicating good fit (Hu & Bentler, 1999). Using multiple fit indices in cases in which sample sizes are large and nonnormality is limited helps reduce Type II error (Guo, Li, Chen, Wang, & Meng, 2008). To test for weak factorial invariance across groups (Meredith, 1993), the chi-square from a model with all parameters allowed to be unequal across groups was compared with the chi-square from a model with only the loadings constrained to be equal across groups. No means or intercepts were estimated in these models.

For the development of the brief version of the PTCI, item selection was based on the consideration of four criteria: (a) Items with the highest factor loadings on each subscale on the complete 33-item scale were considered for inclusion. (2) After examining the highest factor loadings within each subscale, item content was considered to reduce redundancy between items and for conceptual relevance. For example, if the item content between the items with the highest factor loadings seemed conceptually redundant, a correlation between these items was conducted to assess for multicollinearity. If the items had a large correlation with each other, then the item with less conceptual relevance was removed and the item with the next highest factor loading would be considered. (c) In order to reduce item cross-loadings between factors, items were not allowed to cross-load at .3 or higher on more than one factor. Therefore, if the modification indices indicated that an item cross-loaded onto two factors, an exploratory factor analysis was conducted to determine the degree of cross-loadings. (d) In an effort to increase external validity, if an item had been removed in several previously replicated CFAs (i.e., Beck et al., 2004; Daie-Gabai et al., 2011; Gulced et al., 2013; Hyland et al., 2015; Muller et al., 2010; Su & Chen, 2008; van Emmerik, Schoorl, Emmelkamp, & Kamphuis, 2006) then the item was considered for removal. Investigators on this study met to discuss all content and statistical issues to reach consensus about the overall and subscale content and items.

Reliability and validity analyses were conducted for the PTCI-9. Internal consistency was assessed using Cronbach’s alpha and was calculated for each individual subscale and the total scale. Bivariate correlations were computed to examine criterion and convergent validity. The criterion in the current study was defined as diagnostic and self-reported PTSD symptoms because negative posttraumatic cognitions are one of the mechanisms that lead to the maintenance and development of PTSD; therefore, criterion validity was assessed by computing bivariate correlations between the PTCI-9 scores with the CAPS and PCL total scores. The PTCI-9 total score was also correlated with the CAPS symptom clusters. A four-factor model of PTSD that separates avoidance and numbing was used because previous factor analyses have suggested that a four-factor model better represents DSM-IV PTSD than a three-factor model (Elhai and Palmieri, 2011; King, Leskin,
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King, & Weathers, 1998). Convergent validity was defined as the relationship between the PTCI and theoretically related constructs, specifically depression and quality of life. Convergent validity was assessed by examining bivariate correlations between the PTCI-9 and the BDI-II and QOLI total scores. Discriminant validity analyses were examined by computing bivariate correlations between the PTCI-9 and the WAIS-III Information and Vocabulary subtests. The Information and Vocabulary subtests of the WAIS-III are resistant to psychological dysfunction (Groth-Marnat, 2009), therefore, these subsets were selected as measures that should not significantly correlate with negative posttraumatic cognitions. Incremental concurrent criterion validity analyses were conducted by computing separate simple linear regression models for the PTCI and PTCI-9 total and subscale scores. Interpretation of correlation effect sizes were based on Cohen (1992), such that .1 = small, .3 = medium and .5 = large.

Results

Study 1: Study 1 Included a Sample of Male and Female Veterans

Development and Factor Structure of the PTCI-9 in Veteran Samples. Using the four selection criteria outlined above, Items 1, 7, 22, 23, 25 27, 31, 33, and 36 were selected to comprise the PTCI-9. The proposed higher order model for the PTCI-9 demonstrated acceptable model fit, $n = 223$, $\chi^2(24) = 48.74$ ($p = .002$), CFI = .97, TLI = .96, RMSEA = .07, probability RMSEA ≤ .05 = .132, 90% confidence interval (CI) = [.04, .10], SRMR = .05. The higher order standardized factor loadings ranged from .66 to .84 and were all statistically significant (see Figure 1). This is notable given that we tested a higher order factor model simultaneously assessing the first- and second-order structure with subscales as indicators of the higher order posttraumatic stress factor. These results indicate that the PTCI-9 factor structure is supported in a veteran sample.

Internal Consistency of the PTCI-9 in Veteran Samples. The PTCI-9 demonstrated internal consistency with Cronbach’s alpha for the PTCI-9 total ($\alpha = .87$) and PTCI-9 Self ($\alpha = .83$), PTCI-9 World ($\alpha = .85$), and PTCI-9 Blame ($\alpha = .80$) subscale scores.

Correlations and Fisher’s z Test Between the PTCI-9 and PTCI in Veterans. As hypothesized, the 9-item and 33-item total scores significantly correlated with each other ($r = .94$, $p < .01$). Also, to guard against criterion contamination, we examined the correlation between the 9-item PTCI and the full PTCI without the nine items included in the PTCI-9 ($r = .87$, $p < .01$). Additionally, the Self ($r = .91$, $p < .01$), World ($r = .90$, $p < .01$) and Blame ($r = .96$, $p < .01$) subscale scores on the PTCI-9 and the 33-item versions of the PTCI significantly correlated with each other. A Fisher’s z test was conducted to test whether there were significant differences in the correlations between the PTCI-9 and 33-item version of the PTCI and the CAPS, PCL, BDI-II and QOLI. Results indicated that there were no significant differences in the correlations between these measures and that the PTCI-9 correlates as strongly with the CAPS, PCL, BDI-II, and QOLI as the 33-item version of the PTCI. See Table 3 for the Fisher’s z test.
Table 3. Fisher’s z Test for Correlations Between the 9-Item and 33-Item PTCI and Other Psychological Measures in the Veteran Sample.

<table>
<thead>
<tr>
<th>Measure</th>
<th>9-Item PTCI</th>
<th>33-Item PTCI</th>
<th>Fisher’s z test</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAPS</td>
<td>.48</td>
<td>.51</td>
<td>−.39 .70</td>
</tr>
<tr>
<td>PCL</td>
<td>.58</td>
<td>.64</td>
<td>−.97 .33</td>
</tr>
<tr>
<td>BDI-II</td>
<td>.67</td>
<td>.74</td>
<td>−.14 .16</td>
</tr>
<tr>
<td>QOLI</td>
<td>−.51</td>
<td>−.57</td>
<td>−.15 .88</td>
</tr>
</tbody>
</table>

Note. The total scores on all measures were used to calculate the correlations. PTCI = Posttraumatic Cognitions Inventory; r = Pearson’s correlation coefficient; CAPS = Clinician-Administered PTSD Scale; PCL = PTSD Checklist; BDI = Beck Depression Inventory–II; QOLI = Quality of Life Inventory; PTSD = posttraumatic stress disorder.

Intercorrelations Between the PTCI-9 Total and PTCI-9 Subscale Scores in Veterans

The PTCI-9 Self subscale correlated with the PTCI-9 World subscale at $r = .58$ ($p < .01$) and PTCI-9 Blame subscale at $r = .45$ ($p < .01$). The PTCI-9 World subscale correlated with the PTCI-9 Blame subscale at $r = .48$ ($p < .01$). The correlations between PTCI-9 subscale scores and the PTCI-9 total scale score were high: (a) PTCI-9 Self ($r = .84$, $p < .01$), (b) PTCI-9 World ($r = .81$, $p < .01$), and (c) PTCI-9 Blame ($r = .82$, $p < .01$).

Criterion Validity of the PTCI-9 in Veteran Samples. As hypothesized, the PTCI-9 total score significantly correlated with the CAPS ($r = .48$, $p < .01$) and PCL ($r = .58$, $p < .01$). The PTCI-9 total score significantly correlated with all four CAPS symptom clusters including the Avoidance ($r = .33$, $p < .01$), Numbing ($r = .39$, $p < .01$), Hyperarousal ($r = .40$, $p < .01$), and Reexperiencing ($r = .32$, $p < .01$) subscales. The PTCI-9 Self, PTCI-9 World, and PTCI-9 Blame subscales significantly correlated with the CAPS ($r = .51$, $40$, and .28, all $p$s < .01, respectively) and PCL ($r = .64$, .50, and .32, all $p$s < .01, respectively) total scores.

Convergent Validity of the PTCI-9 in Veteran Samples. The PTCI-9 total score was significantly correlated with the BDI-II ($r = .67$, $p < .01$) and QOLI ($r = −.51$, $p < .01$). Significant correlations were also found between the BDI-II and the PTCI-9 Self ($r = .73$, $p < .01$), PTCI-9 World ($r = .50$, $p < .01$), and PTCI-9 Blame ($r = .44$, $p < .01$) subscales. The PTCI-9 Self ($r = −.60$, $p < .01$), PTCI-9 World ($r = −.41$, $p < .01$), and PTCI-9 Blame ($r = −.28$, $p < .01$) subscales demonstrated significant, negative associations with the QOLI. These results indicate that the PTCI-9 is associated with both depression and quality of life; however, the magnitude of these relationships demonstrates that the measures still assess different constructs.

Discriminant Validity of the PTCI-9 in Veteran Samples. The WAIS-III Information subtest had nonsignificant relationships with the PTCI-9 total ($r = −.09$, $p = .36$) and PTCI-9 World ($r = −.03$, $p = .80$) and PTCI-9 Blame ($r = .01$, $p = .95$) subscale scores; however, the PTCI-9 Self subscale score had a significant negative relationship ($r = −.21$, $p = .04$) with WAIS-III Information subtest. The WAIS-III Vocabulary subtest also had nonsignificant relationships with the PTCI-9 total ($r = −.18$, $p = .08$) and PTCI-9 Self ($r = .01$, $p = .90$), and PTCI-9 World ($r = −.06$, $p = .55$) subscale scores.

Incremental Validity of the PTCI and PTCI-9 in Veterans. Separate simple linear regressions were conducted to determine if baseline CAPS total scores were associated with the PTCI and PTCI-9 total scores and subscale scores at baseline. For the PTCI, regression models showed all significant associations with CAPS total scores as follows: (a) PTCI total and CAPS total, $β = .51$, $p < .01$, $R^2 = .26$; (b) Self subscale and CAPS total $β = .51$, $p < .01$, $R^2 = .26$; (c) World subscale and CAPS total, $β = .40$, $p < .01$, $R^2 = .16$; (d) Blame subscale and CAPS total, $β = .26$, $p < .01$, $R^2 = .07$. For the PTCI-9, the results from the regression models demonstrated all significant associations with CAPS total scores as follows: (a) PTCI-9 total and CAPS total, $β = .48$, $p < .01$, $R^2 = .23$; (b) PTCI-9 Self subscale and CAPS total $β = .51$, $p < .01$, $R^2 = .26$; (c) PTCI-9 World subscale and CAPS total, $β = .40$, $p < .01$, $R^2 = .16$; (d) PTCI-9 Blame subscale and CAPS total, $β = .28$, $p < .01$, $R^2 = .08$.

Study 2: Study 2 Included a Sample of Civilian Women Trauma Survivors

Factor Structure of the PTCI-9 in a Female Civilian Sample. CFA showed that the proposed higher order nine-item PTCI structure demonstrated adequate model fit, $n = 223$, $χ^2(24) = 44.50$ ($p = .007$), CFI = .95, TLI = .92, RMSEA = .09, probability RMSEA ≤ .05 = .07, 90% CI = [.04, .12], SRMR = .05. The higher order standardized factor loadings ranged from .71 to .80 and were all statistically significant (see Figure 2). The model fit indicated that the PTCI-9 factor structure is supported among civilian trauma survivors.

Internal Consistency of the PTCI-9 in a Female Civilian Sample. The PTCI-9 total and PTCI-9 Self, PTCI-9 World, and PTCI-9 Blame subscale scores demonstrated strong internal consistency. Cronbach’s alphas were .87, .84, .82, and .80, respectively.

Correlations and Fisher’s z Test Between the PTCI-9 and PTCI in Female Civilians. The 9-item and 33-item PTCI total scores significantly correlated with each other ($r = .93$, $p < .01$). To protect against criterion contamination, we examined...
the correlation between the nine-item PTCI and the full PTCI without the nine items included in the PTCI-9 and the correlation was \( r = .87 \) \((p < .01)\). Additionally, the Self \((r = .91, p < .01)\), World \((r = .93, p < .01)\), and Blame \((r = .96, p < .01)\) subscale scores on the 9-item and the 33-item versions of the PTCI significantly and largely correlated with each other. Consistent with the veteran sample, results from the Fisher’s \(z\) test indicated that there were no significant differences between the 9-item and 33-item versions of the PTCI and the CAPS, PCL, BDI-II, and QOLI. These results show that the PTCI-9 relates as strongly as the 33-item measure with these other measures (see Table 4 for the Fisher’s \(z\) test results).

**Intercorrelations Between the PTCI-9 Total and PTCI-9 Subscale Scores in Female Civilians.** The correlations between subscale scores on the PTCI-9 ranged from \( r = .48 \) to .54 as follows: The PTCI-9 Self subscale correlated with the PTCI-9 World subscale at \( r = .50 \) \((p < .01)\) and PTCI-9 Blame subscale at \( r = .54 \) \((p < .01)\). The PTCI-9 World subscale correlated with the PTCI-9 Blame subscale at \( r = .48 \) \((p < .01)\). The correlations between subscale scores on the PTCI-9 and the PTCI-9 total score ranged from \( r = .77 \) to .85 as follows: (a) PTCI-9 Self \((r = .84, p < .01)\), (b) PTCI-9 World \((r = .77, p < .01)\), and (c) PTCI-9 Blame \((r = .85, p < .01)\).

**Convergent Validity of the PTCI-9 in Female Civilians.** Consistent with results obtained with the veteran sample, the PTCI-9 total score significantly correlated with the BDI-II \((r = .66, p < .01)\) and BDI-II \((r = .70, .54, .39, p < .01\) respectively). As the correlation between the nine-item PTCI and the full PTCI without the nine items included in the PTCI-9 and the correlation was \( r = .87 \) \((p < .01)\). Additionally, the Self \((r = .91, p < .01)\), World \((r = .93, p < .01)\), and Blame \((r = .96, p < .01)\) subscale scores on the 9-item and the 33-item versions of the PTCI significantly and largely correlated with each other. Consistent with the veteran sample, results from the Fisher’s \(z\) test indicated that there were no significant differences between the 9-item and 33-item versions of the PTCI and the CAPS, PCL, BDI-II, and QOLI. These results show that the PTCI-9 relates as strongly as the 33-item measure with these other measures (see Table 4 for the Fisher’s \(z\) test results).

**Table 4. Fisher’s \(z\) Test for Correlations Between the 9-Item and 33-Item PTCIs and Other Psychological Measures in the Civilian Sample.**

<table>
<thead>
<tr>
<th>Measure</th>
<th>9-Item PTCI</th>
<th>33-Item PTCI</th>
<th>Fisher’s (z) test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>total</td>
<td>total</td>
<td></td>
</tr>
<tr>
<td></td>
<td>( r )</td>
<td>( n )</td>
<td>( r )</td>
</tr>
<tr>
<td>CAPS</td>
<td>.41</td>
<td>105</td>
<td>.47</td>
</tr>
<tr>
<td>PCL</td>
<td>.52</td>
<td>105</td>
<td>.59</td>
</tr>
<tr>
<td>BDI-II</td>
<td>.66</td>
<td>102</td>
<td>.68</td>
</tr>
<tr>
<td>QOLI</td>
<td>-0.40</td>
<td>109</td>
<td>-0.42</td>
</tr>
</tbody>
</table>

Note. PTCI = Posttraumatic Cognitions Inventory; CAPS = Clinician-Administered PTSD Scale; \( r \) = Pearson’s correlation coefficient; PCL = PTSD Checklist; BDI-II = Beck Depression Inventory-II; QOLI = Quality of Life Inventory; PTSD = posttraumatic stress disorder.

**Figure 2.** Factor loadings for the Brief Version of the Posttraumatic Cognitions Inventory (PTCI-9) in the civilian sample.
hypothesized and consistent with the veteran sample, the PTCI-9 total score had a medium, negative association with the QOLI ($r = -.40, p < .01$). The PTCI-9 Self ($r = -.45, p < .01$), PTCI-9 World ($r = -.32, p < .01$), and PTCI-9 Blame ($r = -.32, p = .02$) subscales also demonstrated significant negative associations with the QOLI. These findings indicate that the PTCI-9 relates to depression and quality of life in the expected directions.

**Discriminant Validity of the PTCI-9 in Female Civilians.** The WAIS-III Information subtest had nonsignificant relationships with the PTCI-9 total score ($r = .04, p = .76$) and PTCI-9 Self ($r = .04, p = .75$), PTCI-9 World ($r = .16, p = .18$), and PTCI-9 Blame ($r = -.08, p = .48$) subscales. The WAIS-III Vocabulary subtest also had nonsignificant relationships with the PTCI-9 total score ($r = .08, p = .51$) and PTCI-9 Self ($r = .05, p = .68$), PTCI-9 World ($r = .07, p = .54$), and PTCI-9 Blame ($r = .07, p = .56$) subscales.

**Incremental Validity of the PTCI and PTCI-9 in Civilians.** Separate simple linear regressions were conducted to examine associations of baseline CAPS total scores based on the PTCI and PTCI-9 total scores and subscale scores at baseline. For the PTCI, the results from the regression models all significantly predicted CAPS total scores, except for the Blame subscale, as follows: (a) PTCI total and CAPS total, $\beta = .47, p < .01, R^2 = .22$; (b) Self subscale and CAPS total $\beta = .46, p < .01, R^2 = .21$; (c) World subscale and CAPS total, $\beta = .47, p < .01, R^2 = .22$; (d) Blame subscale and CAPS total, $\beta = .18, p = .06, R^2 = .03$.

For the PTCI-9, the results from the regression models were all significantly associated with CAPS total scores, except for the PTCI-9 Blame subscale, as follows: (a) PTCI-9 total and CAPS total, $\beta = .41, p < .01, R^2 = .16$; (b) PTCI-9 Self subscale and CAPS total $\beta = .42, p < .01, R^2 = .17$; (c) PTCI-9 World subscale and CAPS total, $\beta = .41, p < .01, R^2 = .17$; (d) PTCI-9 Blame subscale and CAPS total, $\beta = .19, p = .05, R^2 = .04$.

**Measurement Invariance of the PTCI-9 Between the Veteran and Civilian Samples**

The model with all parameters freely estimated in the two groups had acceptable model fit, CFI = .954, SRMR = .055, RMSEA = .075, 90% CI = [.05, .10], Probability RMSEA $\leq .05 = .028$, according to fit criteria suggested by Hu and Bentler (1999); however, the overall chi-square was significant, $\chi^2(54) = 105.98, p < .001$. The metric invariance model with loadings constrained to be equal across groups had the model with parameters freely estimated, $\chi^2(270) = 635.046 (p < .001)$, CFI = .923, SRMR = .083, RMSEA = .072, 90% CI = [.07, .08], Probability RMSEA $\leq .05 = .00$. The Yuan–Bentler chi-square difference test resulted in a nonsignificant chi-square of $\Delta \chi^2(9) = 9.45 (p > .05)$, therefore suggesting that measurement of the three-factor PTCI-9 does not differ between the civilian and veteran samples. Moreover, researchers (Chen, 2007; Cheung & Reynolds, 2002; MacCallum, Browne, & Cai, 2005; Roesch, Norman, Merz, Sallis, & Patrick, 2013) have advocated for supplementing the chi-square difference test with information on the changes in the fit indices. For example, Chen (2007) suggests that changes in CFI less than .005 and changes in RMSEA values less than .010 specify no meaningful difference between nested models. As shown in Table 5, the change in the CFI for the constrained and unconstrained models in this analysis was quite small ($\Delta$CFI = .002) and the RMSEA value actually improved ($\Delta$RMSEA = .005) because RMSEA is positively influenced when fewer parameters are estimated. As a result, we concluded that the metric invariance model holds and provides support for partial measurement invariance (i.e., equal factor loadings) among the two populations. Thus, the support for equal factor loadings suggests that you can make meaningful comparisons of the PTCI-9 latent construct across both veteran and civilian samples (Ployhart & Oswald, 2004). A summary of the model fit statistics is provided in Table 5.

**Discussion**

The present study supported the factor structure, reliability, and validity of the PTCI-9, a brief version of the PTCI. The development of the PTCI-9 is consistent with calls for brief and pragmatic measures that reduce researcher, clinician, and patient burden. The factor structure analyses in the veteran sample demonstrated acceptable fit, meeting CFI and SRMR cutoffs, and very close to the recommended cutoff for RMSEA. Within the female civilian sample, the PTCI-9 met the cutoffs for the CFI and SRMR, therefore indicating

<table>
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<tr>
<th>Fit statistics</th>
<th>Model comparisons</th>
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<tbody>
<tr>
<td>CFI</td>
<td>SRMR</td>
</tr>
<tr>
<td>All parameters free (configural invariance)</td>
<td>.954</td>
</tr>
<tr>
<td>All loadings constrained to equal (metric invariance)</td>
<td>.956</td>
</tr>
</tbody>
</table>

Note. Y-B = Yuan–Bentler chi-square difference test. Result of the YB difference test (configural vs. metric models)—Change in $\chi^2 = 9.4509, p = .3967$. CFI = comparative fit index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual.

*p < .05.
that the model still had an adequate fit to the data although the RMSEA statistic was slightly higher than the recommended value for fit. Moreover, measurement invariance testing provided additional preliminary support for the use of this scale when making comparisons across veteran and civilian populations. Overall, the results from these samples indicate that the PTCI-9 represents the latent structure of posttraumatic cognitions within a veteran and female civilian trauma sample. As in the 33-item version, the PTCI-9 is multidimensional with subscales representing Self, World, and Blame constructs. Thus, these findings provide support for the use of PTCI-9 with trauma survivors and individuals with PTSD.

The present studies demonstrated that the 9-item and 33-item versions of the PTCI strongly correlated with each other and are psychometrically comparable and therefore represent the same latent constructs but involve significantly less burden for both patients and providers. Furthermore, results from the Fisher’s z test revealed that the strength of the PTCI-9 and the PTCI criterion and convergent validity did not statistically differ from each other, which indicates that the PTCI-9 performs similarly to the original 33-item version. Additionally, the magnitude of the intercorrelations of the PTCI-9 demonstrates that the subscales are related to each other but are not multicollinear or redundant with each other.

The amount of variance accounted for in CAPS scores by the PTCI total and subscale scores and PTCI-9 total and PTCI-9 subscale scores were similar within the veteran sample. Both the PTCI-9 World and PTCI-9 Blame subscales significantly predicted CAPS total scores at baseline. The PTCI-9 Self subscale accounted for a greater proportion of the variance in CAPS total scores than the PTCI-9 total score. This may be due to certain types of posttraumatic cognitions, such as negative cognitions about the self, being more related to PTSD severity (Moser, Hajcak, Simons, & Foa, 2007). These results suggest that the PTCI-9 subscales, in addition to the PTCI-9 total score, are useful in predicting PTSD symptoms and provide evidence for incremental concurrent criterion validity for the PTCI-9.

Within the civilian sample, the PTCI-9 total, PTCI-9 Self and PTCI-9 World subscales significantly predicted CAPS total scores; however, the PTCI total, Self, and World subscales accounted for more variance in the CAPS compared with their respective PTCI-9 scores. The Blame subscale of both the PTCI and PTCI-9 did not significantly predict CAPS scores. Within the PTCI-9, the PTCI-9 Self and PTCI-9 World subscales accounted for a comparable proportion of the variance to the PTCI-9 total score.

The PTCI-9 demonstrated strong internal consistency for the total and subscale scores in both the veteran and civilian samples. The strength of the associations between the PTCI-9 Total, PTCI-9 Self, and PTCI-9 World subscales and PTSD measures indicate that posttraumatic cognitions are related to PTSD, but are not redundant constructs. Therefore, posttraumatic cognitions are an aspect of PTSD but they are not representative of the entire PTSD diagnosis and are only one of several determinants (e.g., startle response, disrupted extinction learning) of PTSD. The moderate associations among the PTCI-9 and each of the PTSD symptom clusters indicate that negative posttraumatic cognitions relate to each of the PTSD symptom clusters and that targeting negative posttraumatic cognitions in treatment may positively affect each of the PTSD clusters.

The PTCI-9 Blame subscale had the weakest relationship with self-reported and clinician-administered PTSD in the veteran sample and civilian samples; however, this is consistent with previous studies that have found the Blame subscale on the 33-item version of the PTCI to have the weakest correlation with PTSD (Foa et al., 1999; Kolts, Robinson, & Tracy, 2004; Matthews, Harris, & Cumming, 2009; Miller, Handley, Markman, & Miller, 2010) or a non-significant relationship with PTSD (Beck et al., 2004; Porter, Pope, Mayer, & Rauch, 2013; Williams, Jayawickreme, Sposato, & Foa, 2012). There are several possible explanations for the weaker relationship between the PTCI-9 Blame subscale and PTSD. First, the current study administered DSM-IV PTSD measures, and symptoms associated with self-blame were not a symptom cluster in the DSM-IV PTSD diagnostic criterion. Because of the addition of the fourth symptom cluster of PTSD symptomatology (Negative Alterations in Cognition and Mood) in DSM-5, self-blame is now a diagnostic criterion for PTSD. Therefore, it is possible that the PTCI-9 Blame subscale would be more strongly correlated with DSM-5 PTSD measures than it has been found to be with DSM-IV PTSD measures. Alternatively, it is possible that the weaker associations between the PTCI-9 Blame subscale and PTSD may indicate that the PTCI-9 Blame subscale items may not entirely capture the self-blame construct or that certain types of negative cognitions, particularly negative cognitions of the self, may be more related to PTSD severity than other types of cognitions (e.g., Moser et al., 2007). Another possible explanation is that self-blame may not be present in all individuals with PTSD, which could contribute to the weaker association. However, our findings are consistent with previous studies using the original 33-item version of the PTCI that found weaker associations between the Blame subscale and PTSD measures compared with the PTCI total score and other subscales scores.

As hypothesized, the PTCI-9 also significantly correlated with measures of depression. Although the magnitudes of the relationships were comparable, the PTCI-9 Total, PTCI-9 Self, and PTCI-9 Blame subscales scores had
higher correlations with depression than PTSD in the veteran sample. Similarly, the PTCI-9 Total and all PTCI-9 subscales scores also had a higher correlation with depression than PTSD in the civilian sample. These findings reflect how depression is also a common posttraumatic reaction (Kilpatrick et al., 2003; O’Campo et al., 2006; Shalev et al., 1998) and certain PTCI-9 items overlap with general depressive thinking (e.g., “nothing good can happen to me anymore”). However, these findings also highlight that posttraumatic maladaptive beliefs are not unique to PTSD; therefore, the PTCI-9 may be useful in examining how posttraumatic cognitions relate to both PTSD and depressive symptoms after exposure to a traumatic event. This is consistent with the research that suggests that depression is a common response to trauma exposure and often highly comorbid with PTSD (Stander, Thomsen, & Highfill-McRoy, 2014). Researchers and clinicians should consider using the PTCI-9 when working with individuals with trauma-related depression to better understand how these maladaptive posttraumatic appraisals may contribute to posttrauma depressive sequelae. Also consistent with our hypotheses, posttraumatic cognitions demonstrated a negative association with quality of life. This finding is consistent with previous research showing that PTSD is associated with poorer quality of life (Zatzick, Marmar, et al., 1997; Zatzick, Weiss, et al., 1997) and that negative posttraumatic cognitions may be an contributing factor to decreased quality of life in individuals with PTSD. Thus, targeting posttraumatic cognitions during PTSD treatment may result in improvements in quality of life. Discriminant validity analyses conducted between the PTCI-9 and WAIS-III Vocabulary and Information subtests indicated that the PTCI-9 total and subscale scores measure a construct (PTSD cognitions) that is specific to PTSD and not related to other theoretically unrelated constructs (Verbal IQ).

The development of a brief version of the PTCI will allow researchers and clinicians to more efficiently assess and monitor posttraumatic cognitions while maintaining psychometric integrity. The decreased completion time may facilitate more frequent administration in mental health clinics and research studies. The desire for a brief version of the PTCI is evidenced by the use of shortened versions of the PTCI by several studies in the research literature (Constans et al., 2012; Evans, Ehlers, Mezey, & Clark, 2007; Karstoft, Galatzer-Levy, Statnikov, Li, & Shalev, 2015; Kleim & Ehlers, 2008; Miller, Markman, & Handley, 2007). However, the various shortened versions consisted of different items, limiting the ability to compare findings across studies. Therefore, the PTCI-9 is a standardized brief version of the measure that can be used in PTSD and trauma-related depression research.

One potential use of the PTCI-9 is to study the underlying mechanisms of evidence-based PTSD treatments without unduly increasing participant burden. Negative posttraumatic cognitions are positively associated with PTSD severity (Beck et al., 2015; Foa & Rauch, 2004; Dunmore, Clark, & Ehlers, 2001) and contribute to the maintenance of PTSD (Dunmore et al., 2001; O’Donnell, Elliott, Lau, & Creamer, 2007); therefore, it would be useful to understand how these symptoms change during treatment. Although recent studies have demonstrated that changes in negative cognitions precede changes in PTSD symptoms during PTSD treatments such as CPT and prolonged exposure therapy (Foa, Hembree, & Rothbaum, 2007), there is a need for future research to replicate these findings in different patient populations and determine if changes in posttraumatic cognitions precede changes in PTSD symptoms during other types of PTSD treatment, such as cognitive–behavioral conjoint therapy, present centered therapy, and eye movement desensitization and reprocessing.

Some limitations of the present study should be noted. The current study derived the PTCI-9 using PTCI data from a sample of veterans whose posttraumatic cognitions may differ in severity and content from trauma survivors of other trauma types (e.g., natural disasters) so generalizability may be limited. This concern is somewhat mitigated because of the replication of findings in a sample of female civilians with various trauma types who were diagnosed with PTSD. Another limitation of this study involves the potential overlap between DSM-5 PTSD symptoms and items from the PTCI-9 (self-blame, strong negative beliefs about self, others, and the world). It is possible that the use of these items on the PTCI-9 may overlap with DSM-5 PTSD symptomatology and not provide additional clinical information, however, the high correlation with depression suggests it may provide additional clinical information. Additional research examining the PTCI and the PTCI-9 is an important next step. However, a brief measure of the PTCI is still useful as a low burden measure that can be used by providers and clinicians to track changes in posttraumatic cognitions and provide other useful clinical information. Additionally, because the PTCI-9 has been found to strongly correlate with depressive symptoms, it may still be a useful tool for providers and researchers to use when working with individuals whose primary target for treatment is trauma-related depression. Another limitation of this study was that the vast majority of the veterans and civilians were diagnosed with PTSD after being administered the CAPS, which is unlikely to be characteristic of the overall veteran and civilian population. Finally, the current study used CFA to develop the PTCI; however, item response theory would have been another possible analytic approach to the development of this brief measure.

Despite the aforementioned limitations, the current study has a number of strengths. The PTCI-9 will allow quicker assessment of posttraumatic cognitions which is particularly important if it is being administered as a part of a large...
assessment battery. The present study was the utilization of rigorous statistical analyses and testing of a higher order model to develop a brief version of the PTCI. Finally, the PTCI-9 will be useful in future longitudinal research studies that are interested in understanding mechanisms of PTSD treatment outcomes.

The development of the PTCI-9 provides a future research agenda. Future researchers should conduct replication studies of the PTCI-9 in various trauma populations to determine if the factor structure, reliability, and validity can be replicated (e.g., motor vehicle accident survivors, natural disaster survivors, first responders). Additionally, future studies should continue to compare the psychometric properties of the 9-item and 33-item versions of the PTCI. Given that the DSM-IV diagnostic criteria had fewer symptoms characterized by negative affect and cognition, future researchers should examine if the PTCI-9, particularly the PTCI-9 Blame subscale, will have a stronger association with DSM-5 PTSD measures due to the addition of the Negative Alterations in Cognition and Mood symptom cluster and the addition of a self-blame criterion. The PTCI-9 will allow researchers, clinicians, and organizations to assess a clinically relevant construct while achieving a culture of efficiency and pragmatism.

Appendix A

The Posttraumatic Cognitions Inventory – 9 Item (PTCI-9)

We are interested in the kind of thoughts which you may have had after a traumatic experience. Below are a number of statements that may or may not be representative of your thinking. Please read each statement carefully and tell us how much you AGREE or DISAGREE with each statement. People react to traumatic events in many different ways. There are no right or wrong answers to these statements. Circle the number that best corresponds to your answer.

1. The event happened because of the way I acted.

<table>
<thead>
<tr>
<th>Totally Disagree</th>
<th>Disagree very much</th>
<th>Disagree slightly</th>
<th>Neutral</th>
<th>Agree slightly</th>
<th>Agree very much</th>
<th>Totally agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

2. People can’t be trusted.

<table>
<thead>
<tr>
<th>Totally Disagree</th>
<th>Disagree very much</th>
<th>Disagree slightly</th>
<th>Neutral</th>
<th>Agree slightly</th>
<th>Agree very much</th>
<th>Totally agree</th>
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3. Somebody else would not have gotten into this situation.

<table>
<thead>
<tr>
<th>Totally Disagree</th>
<th>Disagree very much</th>
<th>Disagree slightly</th>
<th>Neutral</th>
<th>Agree slightly</th>
<th>Agree very much</th>
<th>Totally agree</th>
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4. I can’t rely on other people.

<table>
<thead>
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<th>Totally Disagree</th>
<th>Disagree very much</th>
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<th>Neutral</th>
<th>Agree slightly</th>
<th>Agree very much</th>
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5. I have no future.

<table>
<thead>
<tr>
<th>Totally Disagree</th>
<th>Disagree very much</th>
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<th>Neutral</th>
<th>Agree slightly</th>
<th>Agree very much</th>
<th>Totally agree</th>
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6. People are not what they seem.

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<tr>
<th>Totally Disagree</th>
<th>Disagree very much</th>
<th>Disagree slightly</th>
<th>Neutral</th>
<th>Agree slightly</th>
<th>Agree very much</th>
<th>Totally agree</th>
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7. There is something about me that made the event happen.

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<thead>
<tr>
<th>Totally Disagree</th>
<th>Disagree very much</th>
<th>Disagree slightly</th>
<th>Neutral</th>
<th>Agree slightly</th>
<th>Agree very much</th>
<th>Totally agree</th>
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8. I feel like I don’t know myself anymore.

<table>
<thead>
<tr>
<th>Totally Disagree</th>
<th>Disagree very much</th>
<th>Disagree slightly</th>
<th>Neutral</th>
<th>Agree slightly</th>
<th>Agree very much</th>
<th>Totally agree</th>
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9. Nothing good can happen to me anymore.

<table>
<thead>
<tr>
<th>Totally Disagree</th>
<th>Disagree very much</th>
<th>Disagree slightly</th>
<th>Neutral</th>
<th>Agree slightly</th>
<th>Agree very much</th>
<th>Totally agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

Note. PTCI-9 = Posttraumatic Cognitions Inventory–9 Item. The instructions used for the PTCI-9 are the same as the instructions in the original Foa, Ehlers, Clark, Tolin, and Orsillo (1999) article.
Appendix B

Scoring Key for the Posttraumatic Cognitions Inventory – 9 Item (PTCI-9)

<table>
<thead>
<tr>
<th>Negative Cognitions About the Self</th>
<th>Negative Cognitions About the World</th>
<th>Self-Blame</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item 5</td>
<td>Item 2</td>
<td>Item 1</td>
</tr>
<tr>
<td>Item 8</td>
<td>Item 4</td>
<td>Item 3</td>
</tr>
<tr>
<td>Item 9</td>
<td>Item 6</td>
<td>Item 7</td>
</tr>
<tr>
<td>Sum A</td>
<td>Sum B</td>
<td>Sum C</td>
</tr>
<tr>
<td>+ 3 = _______</td>
<td>+ 3 = _______</td>
<td>+ 3 = _______</td>
</tr>
<tr>
<td>(Mean A Score)</td>
<td>(Mean B Score)</td>
<td>(Mean C Score)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total Score</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mean A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mean B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mean C</td>
</tr>
<tr>
<td></td>
<td></td>
<td>+ 3 = _______</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Total Score)</td>
</tr>
</tbody>
</table>

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